



Metropolitan Planning Organization
for the Miami Urbanized Area

Transportation Voice

Waterborne Transportation in Miami-Dade County

Fall 2006

Can Water Transit Alleviate Traffic Congestion?

Sunny tropical weather mixed with an array of potential waterways is an agreeable mix for a water transit system. Miami-Dade County has an untapped resource of waterways for transportation that can be used for both commuting and tourism running throughout the area, primarily Biscayne Bay.

Many cities throughout the world have benefited from this effective and efficient mode of transportation. San Francisco, California uses ferry systems for commuting between several nearby cities. Nearby Fort Lauderdale incorporated a "Water Taxi" that has experienced increased ridership since 1988. Venice, Italy is a world-renown symbol for waterborne transportation, using two alternate forms of water travel, *vaporettos* and *motoscafis*, used primarily by residents as small shuttles or taxis. They also use their famous gondolas to transport visitors throughout the city.

A waterborne transportation system in Miami-Dade County can provide benefits to both commuters and tourists alike. "Experiencing traffic congestion at peak

times while driving a car may increase ridership on water vessels," predicted Frank Baron, Miami-Dade Metropolitan Planning Organization (MPO) Project Manager.

Travel along waterways, such as Biscayne Bay, may reduce the travel time of commuters during rush hour due to less barriers and stops. A water transit system may seem attractive to tourists in providing an effective means for scenic sightseeing. Ultimately, a waterborne system can be effective and innovative, and may be an alternative for Miami-Dade to attempt. "Water transportation would be fun and accessible for residents and visitors to the city," said Baron. "As long as connections are created in locations accessible for riders, then this is a mode that could certainly work for Miami-Dade County," he added.

A waterborne transportation system may be the next wave of transportation in Miami-Dade County. It may provide for easier travel around town provoking visitors with a new way to experience and enjoy our County first-hand.

Transportation Systems Manager, Frank Baron, III, kayaked into the sunset on June 30, 2006 after spending 19 of his 26 years at the County with the Miami-Dade MPO. Staff would like to thank Frank for his years of dedication and service to the MPO and let him know he was appreciated for his knowledge, spirit, and hard work, especially on the project illustrated in this newsletter. As he takes a "freight load" of memories with him, we wish Frank everlasting joy as he makes the transition from transportation planner to enjoy what transportation has planned.

Thank you Frank!



Did You Know...

Historically, waterborne transportation is not new to Miami. Between the mid-1920s until the 1940s, Venetian Gondolas traveled along the Coral Gables Waterway transporting guests from the Biltmore Hotel to Tahiti Beach, now known as Coco Plum. This water transit system was created by George Merrick, the visionary developer who designed the City of Coral Gables. Merrick's waterborne transit system was also used by residents to travel from house to house as well as to send and receive their mail. Today, residents are still able to travel to and from their homes using private vessels, but the waterway is primarily used for recreational purposes.



The Biltmore Hotel



Tahiti Beach in the 1920's

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Vessel Designs

Based on research by the Miami-Dade County MPO, three general vessel services would be possible for a waterborne transit system along Biscayne Bay:

1. *Water Taxi Service* – vessel capacity of less than 100 persons.
2. *Water Ferry Service (Pedestrian Only)* – recommended vessel capacity is between 100-150 persons.
3. *Water Ferry Service (Pedestrians and Cars)* – vessels that accommodate automobiles as well as pedestrians.



Low-Wash Catamaran

The vessel design to meet the environmental protection needs of the County's waterways would be a low-wash catamaran. The frame of low-wash catamarans is long, slender, low-draft, and U-shaped that can be used in the most environmentally sensitive areas. These vessels are successfully being used around the world in Sydney, Lisbon, London, and Ireland.

Waterborne Systems: Internationally

Australia
Canada
Egypt
England
Finland
France
Greece
Holland
Israel
Puerto Rico
St. Vincent
Turkey



Possible Routes for Water Transit

There is further consideration for waterborne transit throughout Biscayne Bay as well as canals downstream of the salinity dams. According to the MPO's *Feasibility of Utilizing Miami-Dade County Waterways for Urban Commuter Travel Study*, potential routes include: Biscayne Bay, the Miami River, and the Coral Gables Waterway. Expansion could extend routes along the Miami River to serve the Civic Center area and provide access to the Orange Bowl. Extending a Coconut Grove route further south could provide access to the Downtown Miami area. Depend-

ing on ridership volumes and patterns, a route from Aventura to Miami may also be feasible.

The canal system is, for the most part, transit restrictive. Mobility is deterred in most canals due to numerous low bridges and pipeline crossings that make transportation nearly impossible. Likewise, there are salinity dams that block connectivity with the saltwater of Biscayne Bay from the freshwater canals.

Routes that are accessible and serve the best interest of Miami's environment and residents will need to be developed for a successful water transit system.

Terminal Designs

Terminals can be provided for commuter and tourist ferry services along Biscayne Bay. The following types of ferry terminals were identified as possibilities for Biscayne Bay:

- ♦ *Central Business District (CBD) Ferry Terminals* – attracts high numbers of commuters and tourists as it is centrally located in the Downtown Miami area.
- ♦ *Suburban Ferry Terminals* – helps feed the CBD terminal by providing passengers access to the water transit system at various points along the route.
- ♦ *Small Community Ferry Terminals* – serves as ferry "stops" rather than terminals requiring little or no construction.



Brisbane, Australia Ferry Terminal

Terminal facilities normally include: ticket sales office, weather shelters, benches, and security lighting. The combination of these terminal services would allow for efficient and reliable water transportation.

Waterborne Systems: Nationally



Benefits of Waterborne Transit

Miami-Dade County enjoys an extensive coastline and an array of inland waterways that could make a waterborne transportation system feasible and attractive. If implemented properly, a waterborne transit system may provide competitive travel times to those of the automobile and other modes of transportation.

The waterborne transportation system is expected to provide several advantages over other components of the County's transportation system. Through adequate

services, users may be attracted to water transit by offering a reliable, useful, and novel addition to the existing transportation network. Tourists may envision the system as an extension of the local attractions and provide a new venue for sightseeing. As per the MPO's findings, properly planned routes, serving major travel patterns, may serve commuters in meeting their transportation needs, by offering competitive travel times during peak hours. In addition, due to the waterways' reliability, the system could be relatively

competitive to other modes, such as urban rail transit and light rail transit systems.



Miami Beach Waterway

Environmentally Friendly System

Preserving the environmental assets of Miami-Dade County is an essential component to the implementation of a waterborne transportation system. Several technological advances

have been examined in an effort to provide the most effective, environmentally-friendly transit system.

The low-wash catamaran's two long, slender frames provide for significantly reduced wake wash (the waves generated by high-speed craft) and higher speeds at lower water levels. Also, the U-shaped frame sections are composed of no hard corners that reduce potential manatee injuries. A manatee-friendly system that shrouds the blades of the propeller adds to the environmental design.

Extensive research in Manatee Avoidance Technology has resulted in various protective mechanisms including: boat-mounted infrared imaging detection systems, boat-mounted active imaging sonar systems, and a buoy or piling-mounted passive or active sonar system that activates a light stick. All of these mechanisms strive to alert and assist boaters to take evasive action. Other technologies have provided for an acoustic projector that alerts manatees.

Ultimately, a waterborne transit system must aim to provide efficient and effective transportation without endangering the surrounding environment.



South Florida Manatees

Riding the Wave Into the Future of Transit

According to the *Feasibility of Utilizing Miami Dade County Waterways for Urban Commuter Travel Study*, a public/private business model may present the greatest opportunity for the implementation of a waterborne

transportation system. The role of government would be to secure funding for capital investments for terminals and support facilities. A private entity could then provide waterborne transit vessels and operate them.

The Miami-Dade MPO has sent out a request for letters of interest throughout the community for potential partners to coordinate the implementation of a waterborne transportation system. The MPO is now reviewing inquiries from companies interested in such a system.

**Tell us
what you
think about
waterborne
transit...**

**Metropolitan
Planning
Organization
Governing
Board**

*Planning
the Future of
Transportation!*

Get Involved!

(Send us your thoughts on water transit)

1. Would you consider using water transit as a daily travel means? Yes No
2. For example, how much would you be willing to pay to travel by water transit from Aventura to Downtown Miami? \$ _____
3. Likewise, how much would you be willing to pay to travel from Miami Beach to Downtown Miami? \$ _____
4. And, how much would you be willing to pay to travel from Downtown Miami to southern Dade County? \$ _____
5. If ferry terminals were provided along Biscayne Bay, how would you get to them?
 Car Walk Bike Bus Other

Comments:

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